

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims.

41. (Previously Presented) An apparatus for drying hands, comprising:

- a blower for generating an air jet,
- where the blower is a two stage blower, and
- where the blower is driven by an electric motor, and
- a heater for increasing temperature of said air jet, and
- an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,
 - where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and
 - where said air outlet is circular, and
 - where said air outlet has a diameter between 0.5 inches to 1.25 inches, and
 - where said air outlet has a length 3 to 5 times as large as said air outlet diameter, and
 - where said air jet flow is no less than 18,000 linear feet per minute, and
 - where said air jet at said air outlet has a pressure force of about 50 inches of water pressure height at said outlet, and has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and
 - where said air jet is heated, and is at a temperature of approximately 135 deg. F at 4 inches from said air outlet, and
- a sound absorbing portion including an array of sound absorbing projections, said projections having a height of about 0.25 inches and spaced apart by 1/3 of the height, and
- whereby said air jet blows off at least 75% of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water, and

whereby said hands are dried in less than 15 seconds, and

whereby when dried, said hands have less than 0.3 grains of water remaining on said hands, and

whereby immediately after drying, said hands do not cool due to evaporation of remaining water.

42. (Previously Presented) An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is a two stage blower, and

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

where said air outlet is circular, and

where said air outlet has a diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet diameter, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 50 inches of water pressure height at said outlet, and has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and

where said air jet is heated, and is at a temperature of approximately 135 deg. F at 4 inches from said air outlet, and

where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user, and

whereby said air jet blows off at least 75% of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water, and

whereby said hands are dried in less than 15 seconds, and

whereby when dried, said hands have less than 0.3 grams of water remaining on said hands, and

whereby immediately after drying, said hands do not cool due to evaporation of remaining water.

43. (Previously Presented) An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is a two stage blower, and

where the blower is driven by an electric motor, and

where said motor is a brush type motor with a thermistor resistor in series with the brushes to limit the starting current in order to extend said brush life, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

where said air outlet is circular, and

where said air outlet has a diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet diameter, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 50 inches of water pressure height at said outlet, and has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and

where said air jet is heated, and is at a temperature of approximately 135 deg. F at 4 inches from said air outlet, and

where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user, and

a sound absorbing portion including an array of sound absorbing projections, said projections having a height of about 0.25 inches and spaced apart by 1/3 of the height,

whereby said air jet blows off at least 75% of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation the remaining water, and

whereby said hands are dried in less than 15 seconds, and

whereby when dried, said hands have less than 0.3 grams of water remaining on said hands, and

whereby immediately after drying, said hands do not cool due to evaporation of remaining water.

44. (Previously Presented) An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet for outputting said air jet, where said air jet flow is no less than 18,000 linear feet per minute.

45. (Previously Presented) An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and

where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension.

46. (Previously Presented) The apparatus for drying hands of claim 45 wherein:

said air jet flow is no less than 18,000 linear feet per minute, and

said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and

said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet.

47. (Previously Presented) The apparatus for drying hands of claim 46 wherein:

said air jet blows off a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water.

48. (Previously Presented) The apparatus for drying hands of claim 47 wherein:

where said motor is a brush type motor with a thermistor resistor in series with the brushes to limit the starting current in order to extend said brush life, and

49. (Previously Presented) The apparatus for drying hands of claim 44 wherein:

where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user.

50. (Previously Presented) A method of operating a dryer having a blower driven by a motor, the method comprising:

initiating a blow-off phase, wherein said blow-off phase disrupts a stagnation boundary layer on a surface of the hands;

initiating an evaporation phase, wherein said evaporation phase promotes evaporation of water from a surface;

wherein said blow-off phase has a duration of about 2 to about 3 seconds;

wherein said evaporation phase has a duration of about 8 to about 12 seconds;

wherein the dryer includes a heater, operating the heater at least during said evaporation phase to provide an airstream having a temperature of approximately 130 deg. F at 4 inches from an air outlet.

51. (New) A method for drying wet hands comprising:

a forceful stream air using an electrically powered blower, and

an electrical heater for heating said forceful air stream, and

a cylindrical air exit nozzle having uniform cross section and a length 3 to 5 times the largest cross section dimensions of said cylinder, and

whereby said heated forceful stream of air retains sufficient force and temperature at a distance greater than 2 inches from said exit nozzle so that

whereby said forceful stream of air blows off more than 80 percent of the loose water droplets on said wet hands in a time less than 20 seconds.

52. (New) A method for drying wet hands comprising:

a forceful stream air using an electrically powered blower, and
an electrical heater for heating said forceful air stream, and
a cylindrical air exit nozzle having uniform cross section and a length 3 to 5 times
the largest cross section dimensions of said cylinder, and
whereby said heated forceful stream of air retains sufficient force and
temperature at a distance greater than 2 inches from said exit nozzle and,
whereby said heated forceful stream of air blows off more than 80 percent of the
loose water droplets on said wet hands in a time less than 5 seconds, and
whereby said heated forceful stream of air reduces the boundary layer of
stagnating air adjacent to the remaining film of water on said wet hands, and
whereby said the said remaining film of water is evaporated by said heated
forceful stream with reduced back streaming of water molecules from the flow of said
heated forceful stream of air, and
whereby the hands are dried to a comfortable state corresponding to an average of
0.20 grams of water remaining on the hands in less than 20 seconds.

53. (New) A method for drying wet hands comprising:

a forceful stream air using an electrically powered blower, and
an electrical heater for heating said forceful air stream, and

a cylindrical air exit nozzle having uniform cross section and a length 3 to 5 times the largest cross section dimensions of said cylinder, and
said cylinder being round having a diameter between 0.50 inches and 1.25 inches,
and

whereby said forceful air stream is less reduced by entrained room air thus providing improved drying by the resulting air temperature and force at a distance of 4 inches from the said exit nozzle, and

whereby there is enough room so that said wet hands can be rotated and rubbed at a distance of 4 inches from the exit nozzle to spread the water for more efficient drying,
and

whereby said heated forceful stream of air blows off more than 80 percent of the loose water droplets on said wet hands in a time less than 5 seconds, and

whereby said heated forceful stream of air reduces the boundary layer of stagnating air adjacent to the remaining film of water on said wet hands, and

whereby said the said remaining film of water is evaporated by said heated forceful stream with reduced back streaming of water molecules from the flow of said heated forceful stream of air, and

whereby the hands are dried to a comfortable state corresponding to an average of 0.20 grams of water remaining on the hands in less than 20 seconds.

54. (New) A method for drying wet hands comprising:

a forceful stream air using an electrically powered blower, where the blower and the air flow outlet exit dimensions are selected so that the product of the air flow volume and the exiting air pressure is at or near a maximum, and

an electrical heater for heating said forceful air stream, and

a cylindrical air exit nozzle having uniform cross section and a length 3 to 5 times the largest cross section dimensions of said cylinder, and

said cylinder being round having a diameter between 0.50 inches and 1.25 inches, and

whereby said forceful air stream is less reduced by entrained room air thus providing improved drying by the resulting air temperature and force at a distance of 4 inches from the said exit nozzle, and

whereby there is enough room so that said wet hands can be rotated and rubbed at a distance of 4 inches from the exit nozzle to spread the water for more efficient drying, and

whereby said heated forceful stream of air blows off more than 80 percent of the loose water droplets on said wet hands in a time less than 5 seconds, and

whereby said heated forceful stream of air reduces the boundary layer of stagnating air adjacent to the remaining film of water on said wet hands, and

whereby said the said remaining film of water is evaporated by said heated forceful stream with reduced back streaming of water molecules from the flow of said heated forceful stream of air, and

whereby the hands are dried to a comfortable state corresponding to 0.20 grams or less of residual water remaining on the hands in less than 20 seconds.